1.1 INTRODUCTION

The fast-changing digital landscape provides many opportunities for marketers. It is important to understand key concepts such as ubiquitous computing and how the pace of technology has changed. This chapter explains how traditional marketing models like Diffusion of Innovation are still valid and apply to online opinion leaders, as well as differences between generations.

We explore the meaning and impact of 'digital disruption' and 'the Internet of Things', with new business models emerging to understand how this applies to consumers. In a world where your personal information has value, you can discover more about 'big data' and privacy issues that affect marketing plans. The last part of this chapter considers bitcoin and blockchain and how this might influence the future of data management.

1.2 A NEW ERA

The growth of digital marketing has changed the relationship between businesses and customers. Scholars and practitioners agree that organisations are keen to use digital marketing to engage with their customers and we have moved into a new era where things look different.

KEY TERM UBIQUITOUS COMPUTING

The term 'ubiquitous computing' was originally coined by Mark Weiser, who was head of the Computer Science Laboratory at the Xerox Palo Alto Research Center (PARC) when writing in *Scientific American* in 1991 (Weiser, 1991). At that time Weiser commented that in the future there would be computers everywhere and we would not notice their presence; they would just be there.

Some decades later, we have computers at home and with us at university; they are embedded in our mobiles, wearables, in cars, in outdoor billboards – everywhere. We have reached Weiser's vision that computers are integrated 'seamlessly into the world at large' (p. 94).

One of the reasons for these trends and the change in the digital landscape is due to the acceleration in the adoption of new technologies. It took more than 50 years for over 50% of US households to adopt telephones (imagine life with no phone!), nearly 20 years to adopt home computers, yet it took less than 10 years for the same group to adopt smartphones.

In a pre-digital age, you booked a holiday by visiting the travel agents on the high street. It was only on arrival at your holiday destination that you saw what the hotel really looked like. Today you will go online, read reviews, see 'traveller photos' or holiday snaps others have shared and ask questions of people who have actually visited the destination 'IRL' (= in real life).

1.2.1 THE PACE OF TECHNOLOGY SUBSTITUTION

Writing in the *Harvard Business Review*, Ron Adner and Rahul Kapoor (2016) explored the pace of technology substitution and suggested that the speed of replacement was based on ecosystems. Old technology ecosystems may find product extension opportunities whereas the new technology ecosystems need to counter these challenges. Within their framework there are four quadrants, as shown in Figure 1.1, which can be described as:

- **Creative destruction**, where there are few challenges to the new tech and few opportunities for the old tech, resulting in fast substitution.
- **Robust coexistence**, where the old tech fights back and brings out alternatives and a gradual substitution takes place.
- **Illusion of resilience**, where the new tech moves in with few challenges.
- **Robust resilience**, where old tech fights back and new tech challenges, bringing about a gradual substitution.

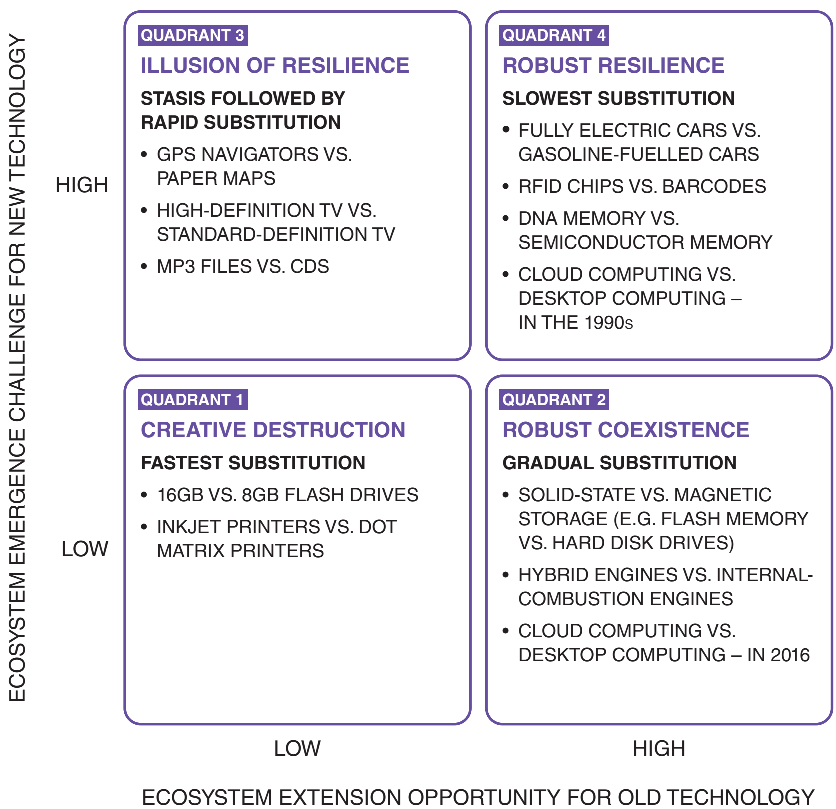


Figure 1.1 A framework for analysing the pace of technology substitution

Source: Adner and Kapoor, 2016, p. 66